

In the Name of God

**Islamic Republic of Iran
Ministry of Health and Medical Education
Deputy for Education**

**Echocardiography
Degree: Fellowship**

Program Description

Echocardiography fellowship is trying to increase the practical skills and theoretical knowledge of cardiologists and improve the quality of education, research, and medical treatment services and access to the latest medical scientific findings. In respect to echocardiography development, this science is now considered one of the most important tools for diagnosing and determining treatment strategies in cardiovascular diseases. Echocardiography is based on the technology of the ultrasound waves for the assessment of cardiovascular function and structure. This technology clinically entered cardiology 40 years ago and has steadily developed since then, and gradually more complex diagnostic modalities have been introduced. This development along with the unique characteristics of this imaging method has made echocardiography an integral part of cardiology and has had a significant impact on the diagnosis and treatment of heart diseases, including medical and surgical treatments. In fact, this is one of the main and probably the most common imaging techniques for assessing the structural performance of the heart. Considering the expansion, sensitivity, and complexities of this method, echocardiography is currently taught as a fellowship course around the world. Therefore, since cardiology specialty training program in Islamic Republic of Iran is in parallel to that of developed countries, it is essential to extend this course in the country and develop training courses in academic centers both at theoretical and practical levels. Obviously, this process requires a curriculum under the supervision of Ministry of Health and Medical Education. Therefore, after several meetings and with the participation of the experts of the compilation committee, this curriculum was developed to set the minimum requirements.

Definition & Duration of the Training Program:

Echocardiography fellowship is a subset of cardiology, and the graduates are engaged in screening, diagnosing, and recommending treatment and care for patients with cardiovascular diseases using ultrasound imaging and provide the society with their knowledge and expertise in the areas of education, research, and health services.

The duration is 18 months.

Aims:

- 1- To train knowledgeable, competent, and liable Physicians in order to provide echocardiography related diagnosis, treatment, prevention, education, and research in the society.
- 2- In next 10 years, Iran will be among the top countries in the world in terms of educational standards and research products and service provision people in this field.

Admission Requirements

- 1-Board of Cardiology Specialty
- 2- Board of Cardiology Subspecialty

Expected Competencies at the End of the Program

General Competencies*

Specific Competencies and Skills

Procedural Skills (Diagnostic-Therapeutic procedures) and variety of patients:

All cases of TTE including:

1. Rheumatic valve diseases
2. Other valve diseases (congenital)
3. Prosthetic valve diseases
4. Assessment of left and right ventricular systolic (and diastolic) functions
5. Degenerative valve disease
6. Systemic blood pressure
7. Cardiomyopathies (congestive, hypertrophic, restrictive, etc.)
8. Ischemic heart disease
9. Infective endocarditis
10. Non-cyanotic congenital heart disease (operated and non-operated)
11. Heart tumors
12. Increased pulmonary arterial pressure and pulmonary embolism
13. Aortic diseases (aneurysm and dissection)
14. Complex cyanotic congenital diseases
15. Operated complex congenital diseases and surgical shunts
16. Pericardial diseases (Tamponade and CP)

TEE

IOTEE (Intraoperative transesophageal echocardiography ordered by a cardiac surgeon or an anesthesiologist)

Interventional TEE (including mitral valve repair, embedding aortic valve, left atrial appendage closure, ASD closure, and percutaneous repair of prosthetic valve regurgitation)

Esophageal intubation

TDI, TSI, strain imaging

Stress echo

3DE

Educational Strategies, Methods and Techniques*

Student Assessment (Methods and Types)

Assessment Methods:

Written MCQ Examination

Logbook

Oral exam (DOPS and other objective assessment methods)

OSCE

Periods of Assessment:

Logbook assessment every three months during the course

DOPS, in the ninth and fifteenth months

Ethical Considerations*


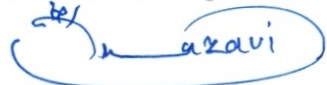
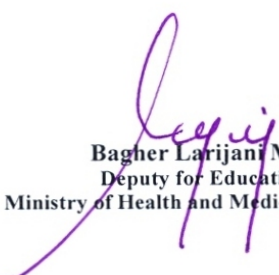
*Note: The related document(s) can be found at <http://hcmep.behdasht.gov.ir/>.

The overall structure of the course:

Educational ward, unit, or setting	Syllabus- measures	Duration (month)
1. Echocardiography lab	History Taking, Physical examination, transthoracic echocardiography Transthoracic echocardiography and IO TEE TDI, stress echo Three-dimensional echocardiography	During the course 7 months & during the course 4 months & during the course 4 months & during the course During the course
2. Hospital wards (including internal ward, surgery ward, CCU, ICU, and emergency ward)	History Taking , Physical examination, transthoracic echocardiography transthoracic echocardiography at bedside and for patients on ventilator	During the course
3. Interventional and cardiac surgery wards (including operating room, Cath lab, EP lab)	Transthoracic echocardiography Transthoracic echocardiography during surgical or interventional procedures	During the course 2 months
Other wards (radiology and pediatric echo)	CT MRI Vascular ultrasonography Pediatric echocardiography	1 month

Some relevant professionalism points:

1. Protecting the privacy of patients (specially women) for preparation and performing echo
2. Giving the necessary explanation of the procedures and the risk of some types of echo (stress echo and TEE) to patients and their family

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